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EFFECTS OF VISUAL ACTIVITY SCHEDULE ON DECREASING TRANSITION LATENCY FOR AN AT-RISK STUDENT

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EFFECTS OF VISUAL ACTIVITY SCHEDULE ON DECREASING TRANSITION LATENCY FOR AN AT-RISK STUDENT

THESIS

A thesis submitted in partial fulfillment of the
requirements for the degree of Master of Science in the
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By

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ABSTRACT OF THESIS

EFFECTS OF VISUAL ACTIVITY SCHEDULE ON DECREASING TRANSITION LATENCY FOR AN AT-RISK STUDENT

A visual activity schedule was used with a 7-year-old African-American male at-risk for Emotional Behavioral Disorder to promote appropriate transitions at school. An A-B-A-B withdrawal design was used to assess the effectiveness of a visual activity schedule on decreasing latency between four transitions that took place in the classroom. Results suggested that using a visual activity schedule decreased the amount of time it took the student to transition between activities. Limitations, and future research suggestions are provided.

KEYWORDS: visual activity schedule, emotional behavioral disorder, latency, transitions

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November 15, 2016

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Section 1: Introduction

Transitioning within the school building (e.g., classroom to cafeteria), within the classroom (e.g., between center areas), and within instruction (e.g., group work to independent work) can be challenging for some students with disabilities (Banda & Grimmett, 2008). According to DePaul, Laracy, and Gormley (2013), challenges such as aggression and non-compliance can occur when students are transitioning from a preferred activity to a non-preferred activity. According to Sainato, Strain, Lefebvre, and Rapp, 25% of a school day can be spent transitioning within the classroom (e.g. turning in an assignment, going to a new activity, or gathering materials to start a new activity), and outside of the classroom (e.g. playground, cafeteria, or bathroom) (1987).

Successful transitions often occur when students complies with the task direction and begins engaging in the next task. For some students, including those with disabilities, additional supports may be needed for successful transitions. Difficulty when switching between a preferred to a non-preferred activity can occur for many different reasons. The new activity they are asked to do may be too difficult or the new activity occurs on the other side of the school. For example, token economies can be used to help a student self-monitor their behavior by adding a token or point following the correct target transition behavior (Zlomke & Zlomke, 2003). Prompting (e.g. Verbal, gesture, full physical) during a transition time, has been suggested as an effective time to give additional support to help them complete their transition (Seelye, Schmitter-Edgecombe, Das, & Cook, 2011). Broden, Hall, and Mitts (1971) found that simply praising students can assist with promoting successful transitions at school. Another support to aid in transition may be the use of a visual support (e.g., visual activity schedule [VAS]) (Knight, Sartini,

& Spriggs, 2015). The use of VAS incorporates praise, cueing the student to check their VAS, and prompts, which can help students to better transition. A visual activity schedule is one of the many nonintrusive visual supports that can be used to help students transition properly throughout their day. This is considered to be nonintrusive because the student dose not rely on a teacher to provide additional support, they can use the VAS to help them navigate independently.

Visual Activity Schedules

A VAS refers to groups of images used to represent an arrangement of task directions. Using VAS in the classrooms for children with disabilities can increase independence when transitioning between activities (Spriggs, Gast, & Ayres, 2007). When using visual supports, students can visually see what they need to do or where they need to go; therefore, visual supports can be used to help students become more independent when navigating though life (Dettmer, Simpson, Smith, & Ganz, 2000) and increase engagement in the activity and with others (Bryan & Gast, 2000).

Multiple studies have successfully used visual supports with students with autism spectrum disorder (ASD) and intellectual disability (ID) to decrease transition latency between activities (Knight, Sartini, & Spriggs, 2015; Spriggs, Mims, Van Dijk, & Knight, 2016). There have been reviews of the literature that have focused on the effects of the VAS on student behavior. Knight et al. (2015) evaluated using VAS with students 3-21 years-of-age with ASD. Results showed that VAS could be considered an evidence-based approach when paired with systematic instructional procedures. Using a VAS assisted students in increasing the amount of skills they were able to acquire when transitioning. Students were also able to maintain and generalize skills to help them transition to the

next task across general education classrooms and in the community. A second review by Spriggs et al. (2016) evaluated literature for adolescents 11 years-of-age and up with intellectual disability. Results revealed that using a VAS is an effective intervention to use to help participant's transition independently when teaching daily living skills, career readiness, leisure activities, direction finding, and academic skills. The use of the VAS also allowed the participants to become more on task during different activities. Improving transitions using a visual support has shown to be effective with individuals with ASD (Knight et al, 2015) and individuals with intellectual disability (Spriggs et al., 2016), but research is needed to expand the research to other populations [e.g., students with or at-risk of emotional and behavioral disorders (EBD).

According to Sterling-Turner and Jordan (2007), a visual support can bring structure for students with ASD and help to create smooth transition changes but it is important to determine if it will do the same for a student with emotional behavior disorder (EBD). For students diagnosed with disabilities, using a VAS can lower the amount of latency time it takes to transition, and increase appropriate behavior desired during transitioning (Knight et al., 2015). Setting students up with a VAS can help bring structure to their daily routine. A study conducted by Dettmer, Simpson, Myles, and Ganz, (2000) used different visual supports (i.e., VAS, finished box, and picture album) to help two elementary-age males with ASD transition from different activities both at home and in the community. Results showed that they were able to lower the latency from when the task direction was given to when they started the next task during the use of the intervention (VAS). Incorporating visual supports into typical activities promoted

increased independence in participants and led to decreases in physical and verbal prompts provided by adults.

Characteristics associated with students with EBD consist of having difficulty directing attention to appropriate stimuli when starting large group activities, failure in academics, non-compliance, following directions, starting new activities, and initiating social conversations with peers (Chute & Nevins, 2003, Geenen, Powers, & Lopez-Vasquez, 2001; Nelson, Benner, Lane, & Smith, 2004; Reid, Gonzalez, Nordness, Trout, & Epstein, 2004). Because of this, students with or at-risk of EBD may experience difficulties trying to navigate throughout their daily life (e.g., compliance, starting a new activity). Without proper support, these students find it harder to be successful while in school (Menzies, Lane, & Lee, 2009). To ensure that a student with EBD can transition throughout their school day, it is critical for them to acquire these sets of skills in order for them to be successful.

Complying with teacher instructions (e.g. engage in the task direction within 5 seconds of giving the direction) and transitioning between activities are two important behaviors to focus on that can help students with or at-risk of EBD transition independently. Incorporating VAS into typical activities can teach students with EBD how to transition independently between activities. In order to extend the literature on VAS we need to determine if VAS can work with students with or at-risk of EBD. For the current study, the researcher decided to replicate the (Dettmer et al., 2000) article to determine if VAS could help to decrease latency for a student at-risk of EBD when transitioning between different activities. Having students learn how to use a VAS could

help them become independent during transitioning throughout their school day and allowing less teacher support during a transition.

Section 2: Research Question

Will a visual activity schedule decrease transition latency at school for a 7-year-old student at-risk of EBD? When using a visual activity schedule will students at-risk of EBD will initiate, within 10-seconds, checking their schedule following a verbal instruction? Will the teacher and student at-risk of EBD use a visual activity schedule with procedural fidelity? Will the teacher and student at-risk of EBD identify that a visual activity schedule is a useful intervention?

Section 3: Methods

Participant

One participant was recruited for this study; inclusion criteria were as follows: (a) student was previously diagnosed with or considered at-risk for EBD; (b) student was physically capable of transitioning independently; (c) student exhibited challenges when transitioning within the classroom; (d) student could follow one-step directions.

Sam, a 7-year-old African American male, was a first grade student enrolled in a general education classroom. Sam repeated Kindergarten prior to enrolling in first grade. At the time of the study, Sam was in a Tier 2 Response-to-Intervention program due to displaying academic delays in reading and behavioral challenges. Sam also receives Tier 3 Response-to-Intervention outside of the general education classroom for reading His teacher reported that Sam had trouble transitioning between activities in the classroom, often requiring two or more verbal cues to successfully transition between activities. School-based assessments indicated that Sam scored in the 27th percentile for reading and 2nd percentile for math on the measure of academic progress (MAP) testing.

The teacher implementing this study is in her 7th year teaching in an elementary school setting. Four years were spent teaching 1st grade (presenting teaching), two years teaching 4th grade, and one year teaching 5th grade. The teacher has a bachelors in General Business/Spanish, and then went back to get a teacher's certificate for kindergarten through fifth grade.

Setting

The study was conducted in Sam's first grade general education classroom at a public elementary school located in an urban area in the Southeast region of the United

States. The classroom included multiple centers (e.g. reading, brave speller, writing, and small groups). Specific transitions that were the focus of the current study included the settings of Sam's desk and the classroom rug, which he was, ask to transition between to complete the four transitions. Sam traveled a distance of no more than 1.16 meters when transitioning between activities. Twenty-two students, one teacher, and one para educator are in the general education classroom during the study. During the student the other students in the classroom were either at their desk or at their correct spot on the rug. During desk activities the teacher and para educator were rotating around the room checking in on each student. The teacher or para educator was always in close proximity of Sam's table. During rug activities the teacher stood at the front of the rug and the para educator stood at the back of the rug.

Materials and Equipment

During the desk activities (i.e. reading and writing), Sam was provided with worksheets that were given to him when he returned to his seat. The rug activities (i.e. brave speller, and small groups) did not include any materials. The teacher used a motivaider, cueing her when to give Sam cues to make the transition. A data collection form was used to document latency to task engagement, frequency and types of prompts, and procedural fidelity data. Latency of each transition were recorded once Sam completed the transition and was engaged in the new activity for 5 consecutive seconds. It also included an area to track frequency of teacher prompts, as well as the types of prompts (e.g., verbal, physical, gestural) used by the teacher. Finally, the form included a place to record procedural fidelity of teacher implementation.

Data Collection

Data were collected for latency to task engagement. Latency measures were determined by starting the timer when the teacher told Sam to "check schedule". During baseline the timer was started when Sam's table was dismissed (i.e. "table 1, move to the rug"). Sam was considered engaged in the appropriate activity following 5 consecutive seconds in the appropriate center. This consisted of Sam sitting in his correct seat at his desk or on the correct circle on the rug and looking towards the material or teacher for 5 consecutive seconds. When this occurred, the timer was stopped and the total latency was recorded. An example of this was when Sam was cued to transition to the rug for brave speller. A timer was started when the cue to transition or to check his VAS was given. Once Sam transition to correct location and was engaged in the new activities for 5 consecutives seconds the timer was stopped. A non-example of this would be starting the timer as soon as Sam was cued to transition or to checked his VAS and the timer was stopped as soon as he entered the correct location for one second. How frequent a prompt was given and the types of prompts used were also recorded. An example of that would be when Sam was cued to transition back to his desk during baseline. After twenty seconds and 40 seconds of no compliance the teacher a verbal cue on where he was suppose to transition to. This would count as two verbal prompts given during one transition. A non-example would be when the teacher first cued Sam that it is time to transition. Procedural fidelity was also collected to ensure the teacher was implementing the intervention correctly. An example of this would be when Sam transitioned to the correct location and was engaged in the new activity for five consecutive seconds verbal specific praise was given (i.e. "You did a great job checking your VAS and coming

straight to your seat"). A non-example would be the teacher saying "good job" when Sam transition to the correct location and was engaged in the new activity for five consecutive seconds.

During baseline the teacher followed a business as usual approach. This consisted of the teacher dismissing Sam by calling his table number when it was time for him to transition. The same four transitions were used during baseline and intervention conditions. Data were collected on how many times Sam was cued to transition and what type of cue was given (e.g., verbal, visual picture, physical). The first cue to transition or to check your VAS was not counted. The researcher recorded each verbal cue as a new event if there were at least a 3 s break between verbal cues. Treatment fidelity data were collected during intervention only. Table 1 presents the steps of procedural fidelity when transitioning. If Sam was able to engage in the correct behavior during step 2, steps 3-11 of the procedure were not used.

Table 1. Procedural fidelity checklist

Steps of Procedural Fidelity
1. Teacher stated time for transition.
2. [a]Teacher stated "It is time to check your schedule."
3. After incorrect or no response within 30 seconds, another verbal propmpt given with a picture of next activity.
4. Step 3 repeated after 30 seconds
5. Step 3 repeated after 30 seconds
6. Step 3 repeated after 30 seconds
7. Step 3 repeated after 30 seconds

8. Step 3 repeated after 30 seconds
9. Step 3 repeated after 30 seconds
10. Step 3 repeated after 30 seconds
11. Following 4 min of verbal prompts, the teacher physically prompted the student to move to next center.
12. [a]Behavior specific praise for moving to correct center.

[a]If student complied following step 2-10, the teacher should move to step 12.

Experimental Design

A single-case withdrawal design (A-B-A-B, Gast, 2010) was used to evaluate the effects of using a VAS on decreasing transition latency. When using a withdrawal design, a functional relation occurs when there are at least three demonstrations of effect at three different points in time, given that threats to internal validity were controlled for during the study. This design was selected because only one student with a reversible behavior participated in this study. Procedure validity was accounted for in this study by making sure this intervention was only given during the 4 selected transitions. This study was also conducted within a few months to control for maturation. Interobserver agreement was collected to control for bias in the study.

Participant Screening

Participant selection followed a three-step process. First, the teacher identified potential students who are receiving special education services for EBD, or students in the 2nd or 3rd tier of the school's response-to-intervention (RtI). Second, the teacher identified which of these students exhibited challenges during in-class transitions. Challenges when transitioning include being cued verbally or given two or more gestures

to transition to the correct center area, or have to be physically moved to the correct center area. Third, the researchers conducted a pre-baseline observation to confirm that the identified student met inclusion criteria. The teacher identified several students that displayed trouble when transitioning. The researcher conducted a pre-baseline observation to confirm challenges during transitions. A consent form was then sent home to gain permission for the student to participate in the study. After four school days without the consent form returned, another form was sent home. After another four school days, a third notification was sent home to the guardians of the student. Sam was the only participant that had a consent form returned to participate in the study; therefore, he was the only participant in the study.

General Procedures

Sessions occurred once per day during a time when four transitions take place within an hour. It happened that this was during the class' center time. As previously mentioned, the four transitions were reading that occurred at the rug, writing that occurred at his desk, brave spelling that occurred at the rug, and small groups that occurred at his desk. Each transition was less than 1.16 meters in distance. When is it time to transition to the first activity, the teacher gained Sam's attention by telling him that it is "center time," and waited for him to respond by looking in the direction of the teacher. After reviewing the four different centers and their location, the teacher instructed Sam to transition to the proper group area. At the beginning of each transition, Sam was cued to transition to the next activity. Data were collected once a day for the four transitions. Following baseline, the teacher was trained on how to use the VAS and the VAS was presented to Sam. When the teacher said, "it's time to check your

schedule", data collection began, and then Sam responded by looking at the VAS. After looking at the VAS, Sam would pull off the appropriate center picture. Verbal cues were used every 30 seconds that Sam was not in the correct center location, for up to 4 minutes. After 4 minutes, Sam was physically moved to the correct center location. Once Sam was in the correct location for 5 seconds the timer was stopped. At least 5 data points were collected within each condition or until data were stable. Once in the intervention condition Sam was given his VAS with all four transitions pictures in place. When Sam had decreased his latency by 25% for 3 consecutive sessions, then the intervention was removed. The procedures were repeated with second baseline and second intervention condition.

Baseline procedures. During baseline, interventions already in use by the teacher (e.g. verbal praise, click chart) were still implemented. Sam was told to transition to "center time" independently. The teacher used the business-as-usual approach to center time transitions using the same four transitions used every school day during this time. A measure of latency from teacher instruction to engagement in appropriate center area for 5 s was measured. A frequency measure of cueing and prompting was also collected during baseline. The research did not cue or prompt Sam during this condition.

Teacher training. The classroom teacher was trained on how to implement the intervention. The researcher modeled the intervention then let the teacher practice implementing the intervention while receiving feedback from the researcher along the way. The teacher was also trained on how to use the motivaider. The teacher would turn the motivator on when she gave Sam the cue to check his VAS. The motivaider was then turned off when Sam was in the correct location and engaged in the activity for 5

consecutive seconds. The researcher collected procedural fidelity on the teacher and once the teacher had scored 100% fidelity for 3 consecutive sessions and Sam's first baseline condition was stable and moving in a accelerating nontherapeutic trend the intervention was presented to Sam.

Intervention procedures. The independent variable in this study was the VAS combined with verbal cues from the teacher. During intervention, the VAS of Sam's center activities were placed on a board where he can reach it independently throughout each transition. Before Sam began his first transition for center time, the teacher placed the correct photos with the center activities for the day. Then the teacher gave the verbal instruction cueing Sam to check his VAS. See Figure 1 for a visual of the activity schedule.

Figure 1. Sam's visual activity schedule.

The VAS has a picture that Sam took with him to the next center time location. This helped him be able to transition to the next task independently. Once it is time to

transition the teacher give the cue “Its time to check your schedule”, starting the timer. Sam had 30 s to pull off the centers picture that he took with him to each center location, until the teacher gave another verbal cue. Once at the correct location, Sam placed the picture of the center activity on his bottom half of the VAS. The timer was stop once the Sam was is in the correct center area oriented towards his work or teacher for 5 consecutive seconds and verbal specific praise will be given. If Sam gives an incorrect or no response the teacher will have a motivaider set at 30 seconds alerting the teacher when to give the next verbal cue paired with a visual picture of the next activity. Once in the correct location verbal specific praise will be given. If Sam is not in the correct location within 4 minutes of the first verbal cue, then Sam will be physically moved to the correct location.

After Sam had checked the VAS, transitioned to the correct location, and placed the visual picture in the correct spot (bottom section of the VAS), verbal specific praise was given. Once in the desired location Sam would work in the center location until cued that the center was almost over (i.e., “3 minutes left to work”). Once cued that the center was over, Sam stopped what he was doing and got ready to transition to the next group. The teacher followed the same routine to help Sam transition to the next activity by using a motivaider to alert her when to give the next cue throughout all 4 transitions. The teacher would start the motivaider when she gave the cue to Sam to “check his schedule”. The motivaider would be set for 30 seconds. After 30 seconds were over and if Sam was still not in the correct location then a verbal cue paired with a picture on the center activity would be presented to Sam. After Sam was in the correct center location and

engaged in the activity for 5 consecutive seconds verbal specific praise was given and the motivaider was turned off until the next transition.

Maximum Transition Time

During intervention conditions, Sam was given up to 30 s after the cue was given to complete the transition. The teacher wore a motivaider set at 30 s. Once the 30 s is up and Sam had not completed the task demand then a verbal prompt paired with a visual picture of the next activity was presented. If Sam had not arrived in the correct location within 4 minutes of the first cue, he was physically moved to the correct center area. Sam never had to be physically moved during baseline or intervention.

Reliability

A graduate student was trained to collect data by using a timer to record latency, counting how many prompts were used and what type, and treatment fidelity to ensure the teacher was implementing the intervention correctly. The researcher and co-observer collected IOA on 6 (26%) sessions across all conditions. To calculate IOA, the researcher divided the shortest latency by longest latency and multiplied by 100. When examining reliability, a minimum of 80% was acceptable to continue this study. Interobserver agreement averaged at 98.5% (range 97-99%).

Social validity was measured using a Likert-type scale allowing the teacher to rate the intervention. This will show the researcher if the teacher found this intervention useful and if they would be willing to use a VAS with another student in the future.
A checklist was used to make sure all trained observers check for treatment fidelity. Treatment fidelity will be collected to ensure the VAS procedures are being carried out as planned. To calculate treatment fidelity, the researcher will take the number of steps

completed correctly divided by the total number of steps multiplied by 100. If the study fell below 80% during treatment fidelity the teacher was retrained. Treatment fidelity was measured for teacher behavior. Treatment fidelity averaged at 88.9% (range 50-100%).

Section 4: Results

Figure 2 presents the results of the study. During the initial baseline condition, the mean latency between the teacher's verbal task direction to transition and completion of the transition was 119.07 seconds (85.25-to-149.75). The absolute level change during this condition was 149.75-to-85.25 seconds. The relative level change was 116.90 -to-126.96. The median level during the first baseline phase was 107.75 s. When visual analyzing the first baseline condition you see that the data points are variable, moving in an accelerating trend in a contratherapeutic direction. The teacher reminded Sam where he was supposed to transition to next activity using 9 verbal cues during the first baseline.

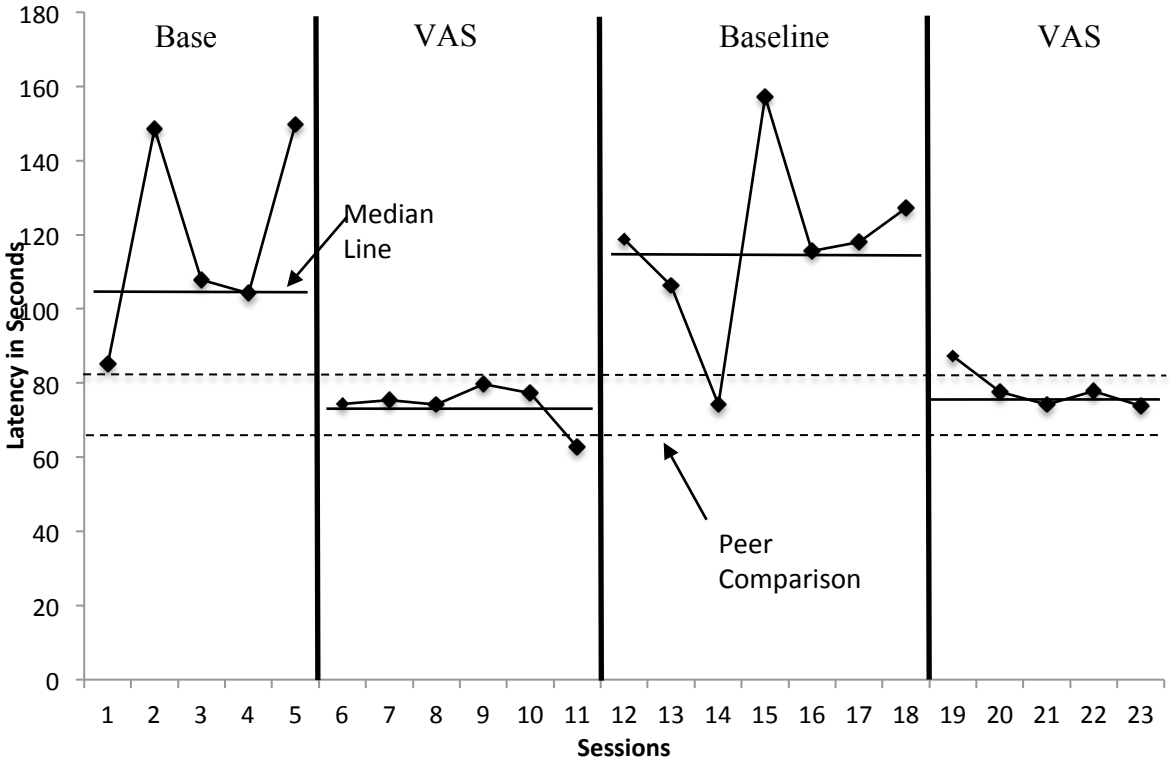

Figure 2. Baseline and intervention latency data for Sam.

Upon introduction of the intervention, mean latency decreased to 73.97 seconds (62.72-to-79.75). The absolute level change during this condition are 74.41 -to- 62.71, with a decelerating therapeutic trend. The relative level change are 74.41 -to- 77.27. The median for the first intervention phase are 74.92 seconds. Between the first baseline condition and the first intervention condition there are 100% percent non-overlapping data (PND). There is also a large drop in levels and data became stable once the intervention was introduced. The teacher used 5 verbal cues during this phase to cue Sam where to transition. Following a return to baseline conditions, mean latency increased to 116.75 seconds (74.24-to-157.23). The absolute level change during the second baseline was 127.12-to-118.73, with an accelerating nontherapeutic trend. The relative level change is 106.31-to-117.94. The median during the second phase of baseline is 117.94. Between the first intervention and the second baseline condition there is 92% PND. A large increase in levels is seen and the data becomes variable once the intervention is removed. A total of 14 cues were used by the teacher to cue Sam on where he was supposed to transition.

Examining Figure 2, intervention (the seconds B condition) mean latency from when the teacher gave her first verbal cue to transition to when Sam arrived to the correct location is 78.18 (73.83-to-87.30). The absolute level change during this phase is 73.83-to-87.30, with a decelerating therapeutic trend. The relative level change is 82.49-to-75.85. The median during the second intervention condition is 77.67 seconds. Between the second baseline condition and the second intervention condition there is 92% PND. Once the intervention was reintroduced a large drop in level and stable data points were

seen. There were 3 verbal cues were used during this condition to cue Sam on where he was supposed to transition.

Sam's average transition time between these two conditions was 76.30 s. Between the first baseline and first intervention phases, Sam's average transition decreased by 45.12 s, or 10 seconds per transition during the first intervention condition. Going from intervention back to baseline, Sam increased his average transition 42.77 seconds. When the return to intervention occurred, Sam's average latency decreased again by 53.33 seconds. Examining the median lines also support that the intervention was successful at reducing latency. As a third measure of comparison between baseline and intervention, the number of verbal prompts used by the teacher also decreased by 56.52% from 23 in baseline conditions to 8 during intervention conditions. In the first baseline it took Sam an average of 119.12 to make all four transitions, taking him 9 minutes to go 76 feet. When the VAS was added in the first intervention condition Sam completed all four transitions at a average of 73.97 seconds, taking him 7 minutes to go 91 feet. Removing the VAS in the second baseline Sam's average transition time was 116.75, taking him 13 minutes to transition 106 feet. Reintroducing the VAS to Sam brought his average transition time to 78.18 in the second intervention condition, taking him 6.5 minutes to transition 76 feet.

	Baseline 1	VAS 1	Baseline 2	VAS 2
Transition 1	33.47	15.05	22.77	21.58
Transition 2	30.69	19.74	30.80	17.92
Transition 3	23.05	20.12	28.27	15.90
Transition 4	31.89	19.06	34.90	22.79
Total Latency	119.10	73.97	116.75	78.18

Table 2. Average latency per transition for Sam.

Section 5: Discussion

The purpose of this study was to evaluate the effectiveness of VAS for decreasing the latency between a teacher directive and transitioning to a new activity in the classroom in a student at-risk for EBD. Prior to implementing the intervention, the participant required multiple verbal prompts to transition to the next activity or would be the last student to independently complete the transition. Data indicated that the VAS was effective for decreasing latency. The participant was able to carry his VAS with him during each transition. Only 2 out of the 12 possible steps in the procedure were used, resulting in low treatment fidelity if one step was implemented incorrectly.

When implementing the intervention, Sam was able to decrease both the amount of time it took to transition and the amount of prompts the teacher needed to give. This allows the teacher more time spent giving Sam instruction in the classroom, rather than on transitioning. When examining the overall effects of reduced latency on Sam's academic learning time, it is important to note how much time can be saved with these reductions in latency to transition. Overall, during intervention, Sam was able to transition 10 s faster per transition. If Sam has 12 transitions in one day, that provides at least 2 more minutes of instruction per day. Extending this would mean 10 minutes per week and almost an hour per month of added instruction. This can be extremely valuable for students that are falling behind academically. More time will be spent learning the content instead of on transitioning.

Transitioning from different center activities was no more than 1.16 meters apart. Combining all four transitions together Sam had to transition 4.64 meters (15 feet) to get to all of the activities. Once the VAS was implemented, Sam was able to transition 2.5

min faster when ask to go the same distance. This will allow Sam to also be able to transition faster when they are further (e.g. down the hallway). When adding the times together, Sam was able to complete all four transitions 8.5 minutes faster when the VAS was used. Using a Vas can help make transitions that are further (e.g. down the hall, to the bathroom) faster. A peer comparison was conducted with a student (peer 1) in the classroom that was identified by the teacher as an above average student when transitioning. Another student (peer 2) was identified by the teacher as a below average student when transitioning. When the VAS was used, Sam was able to transition about 7 seconds faster when compared to peer 2. Sam was about 10 seconds behind peer 1 during transitions.

This study found similar results when compared to the study done by Dettmer et al. (2000) when seeking to decrease latency during a transition. Dettmer et al. (2000) found that a contratherapeutic trend for both participants during baseline. When given the visual supports, both the first and second intervention conditions had a large decrease in levels in a decelerating therapeutic trend for both participates. Verbal prompts also decreased in a decelerating therapeutic trend when switching from baseline (1&2) to intervention (1&2) for both participants. The current study's findings support the results of Dettmer et al. Both studies were successful in decreasing latency when implementing visuals supports because they gave each participate a visual reminder where to transition to next.

When looking at reviews done that focused on individuals with ASD (Knight et al., 2015) and individuals with intellectual disability (Spriggs et al., 2016), similar

findings occurred when adding a VAS to the classroom. The VAS helped each participant become independent during transitions throughout their day.

Limitations and Future Research Directions

In order to say that this is an evidence-based intervention, more research is needed to be conducted with participants with and at-risk of EBD to see what effects a VAS has when transitioning between activities. Only one participant at-risk of EBD was used in this study. This is seen as a limitation because if your participate drops out of the study, you have no one else to use. Future research should replicate this study using 3-4 students both with and at-risk of EBD. Another limitation is that this study only focused on 4 transitions that took place with 1 hour of the school day. Future research could look at more transitions occurring throughout the school day. This study also only looked at transitions that occur inside of the general education classroom. Future research could look to see the effects a VAS has on a student when used in different settings in the school. Another limitation was the lack of procedural fidelity during baseline and intervention conditions. Future research could address this issue when conducting their study.

Conclusion

Looking at VAS used with a student at-risk of EBD in the general education classroom was important to explore because there is limited research on this topic. Compliance is often seen when working with individuals with EBD, providing them with a VAS can help student's transition independently throughout their day, which will help to increase compliance. This intervention will not only help student at-risk of EBD but also help the teacher. The teacher will have to give less prompts during a transition and

allow for more instruction time. Implementing a VAS with a student at-risk with EBD was a successful intervention because when the VAS was added we saw a reduction in latency in both intervention phases.

Appendix A: Event Recording Data Sheet

Name: _____ Trainer: _____ Behaviors: Opportunities to respond, behavior specific praise and opportunities to participate

Session Type: _____ Observation Date: _____
Beginning Time: _____ End Time: _____

Teacher Behavior	# of Tallies	Total # of tallies
Opportunities to respond		
Behavior specific praise		
Opportunities to participate		

Name: _____ Trainer: _____ Behaviors: Opportunities to respond, Behavior specific praise and opportunities to participate

Session Type: _____ Observation Date: _____
Beginning Time: _____ End Time: _____

Teacher Behavior	# of Tallies	Total # of tallies
Opportunities to respond		
Behavior specific praise		
Opportunities to participate		

Appendix B: Event Recording Data Sheet

Observer: _____Date: _____ Session: BL __ INT __ BL ___ INT __

Teacher (T)/Paraprofessional (P) Response	Transition 1	Transition 2	Transition 3	Transition 4
T or P gets student's attention by saying "its center time"	Y N	Y N	Y N	Y N
T or P give a verbal cue saying, "It is time to check activity schedule".	Y N	Y N	Y N	Y N
Verbal specific praise will be give if the student independently goes to the correct center location within the 4 minutes of the first cue.	Y N	Y N	Y N	Y N

Prompts Given: V – Verbal, P – Physical, S – Activity Schedule

USE S PROMPT IN FOR INTERVENTION USE ONLY

:30 secs.	1	2	3	4	5	6	7	8	Latency
Transition 1	V=	V=	V= S prompt Y N	V= S prompt Y N	V= S prompt Y N	V= S prompt Y N	V= S prompt Y N	V= S prompt Y N	L= Physically Moved Student Y N
Transition 2	V=	V=	V= S prompt Y N	V= S prompt Y N	V= S prompt Y N	V= S prompt Y N	V= S prompt Y N	V= S prompt Y N	L= Physically Moved Student Y N
Transition 3	V=	V=	V= S prompt Y N	V= S prompt Y N	V= S prompt Y N	V= S prompt Y N	V= S prompt Y N	V= S prompt Y N	L= Physically Moved Student Y N
Transition 4	V=	V=	V= S prompt Y N	V= S prompt Y N	V= S prompt Y N	V= S prompt Y N	V= S prompt Y N	V= S prompt Y N	L= Physically Moved Student Y N

Operational Definitions: Verbal: "Jimmy its time to come to the desk"; Physical: guiding the student with their hand on their shoulder or physically moving them to the correct location. Activity schedule: Visual picture card used to remind the student where to transition.

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